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ANTI-THEFT ATM ROBBERY DETECTION USING BIG SURVEILLANCE VIDEO DATA

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ABSTRACT

Video reconnaissance framework has turned into a basic part in the security and assurance arrangement of modem urban areas, since savvy checking cameras furnished with canny video examination procedures can screen and pre-alert anomalous practices or occasions. Nonetheless, with the extension of the reconnaissance arrange, monstrous observation video information postures colossal difficulties to the examination, stockpiling and recovery in the Big Data time. This paper shows a novel insightful preparing and usage answer for enormous reconnaissance video information in light of the occasion recognition and disturbing messages from front-end shrewd cameras. The technique incorporates three sections: the astute pre-disturbing for strange occasions, keen stockpiling for observation video and fast recovery for confirm recordings, which completely explores the transient spatial affiliation investigation regarding the unusual occasions in various checking locales. Test comes about uncover that our proposed approach can dependably pre-alert security hazard occasions, considerably diminish storage room of recorded video and essentially accelerate the proof video recovery related with particular suspects.

***KEYWORDS**: Support vector machine, Canny Edge detection, k-Nearest Neighbour, Big Data*

INTRODUCTION

Big Video surveillance system has become a critical part in the security and protection system of modem cities, since smart monitoring cameras equipped with intelligent video analytics techniques can monitor and pre-alarm abnormal behaviors or events. It is an enhanced version of organization security that continuously monitors but only records unusual changes in the organization. These unusual changes may include theft detection in, ATM. And it sends the alert message to the admin or organization when it detect unusual activity. The temporal-spatial association analysis with respect to the abnormal events in different monitoring sites. Modern cities are usually exposed to emergency situations such as traffic accidents, terrorist attacks and crimes.

Video surveillance systems have been playing more and more essential roles in crime prevention and foreinc.

BACKGROUND

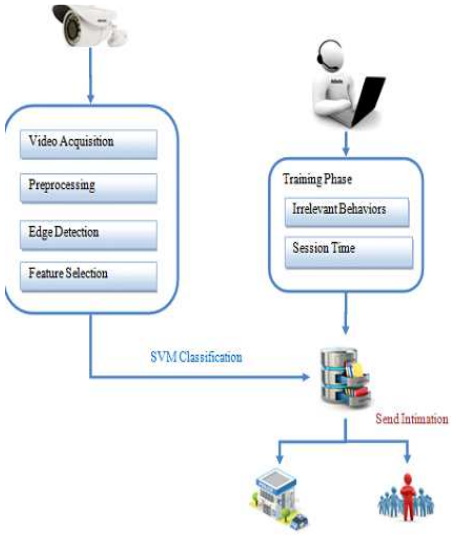
EXISTING SYSTEM

In the existing system, the surveillance cameras are used many other places. It is used to monitor the user activities. But it continuously monitors the activity of the user and where the cameras are fixed. So it utilizes the power and large storage capacity (Hard disk) for store the video footage. It is only store the activities for detect the unwanted activity such that theft, but it is not intimate immediately to the admin or organization. So it is not effective. It is continuously storing the activities, so it requires the large storage for video footage. It requires the more power consumption. It only store activity, does not intimate to the admin. It take more time for classification.

PROPOSED SYSTEM

In the proposed system, to implement the system to overcome this problem. It is used to only monitor the user activity and store when the irrelevant activity is performed the user. So it reduces the storage device. In this system first set the time for each activity in the ATM. When the user enters and the camera detects the user, then it starts the time of the particular event. The user finish the activity within the time the camera only monitors the user. It start recording only when the user take the over time compare to set time. It training the all irrelevant actions to the system. The recorded video is first converted to the frames and it tracks or extract the edges (region of the object) by using canny edge detection algorithm. After that, it constructs the feature vectors from the extracted objects. Compare to the training actions, to implement the SVM Classification for detect the abnormal actions. it intimates the alarm or message to the corresponded authority and nearest police station when the current actions are similar to the abnormal behaviors. It is used to reduce the storage space. The intelligent pre-alert for abnormal events. It reduce the classification time.

SYSTEM MODEL



Video acquisition is a "quick and dirty" way of localizing moving objects in a video shot by a static camera. In this perspective, object detection is often the first step of a multi-stage computer vision system (car tracking, person recognition, wild-life monitoring, etc.). In this project we can upload the videos. The user uploads the video. The Video can be obtained for lesions of any size, shape, and composition in an acceptable amount of time and then filtration the Video to remove the noise and segment the video based on similarities. In this module, we can convert the videos into frames. Using video file reader we separate the whole videos into frames in specific size. Each frame is known as realistic moving images based on standard size using video File reader. The aim of pre-processing is an improvement of the image data that suppresses unwanted distortions or enhances some image features important for further processing. The frames are converting the RGB color to grayscale conversion for noise removal. The Canny edge detector is an edge detection operator that uses a multi-stage algorithm to detect a wide range of edges in images. Canny edge detection is a technique to extract useful structural information from different vision objects and dramatically reduce the amount of data to be processed. It has been widely applied in various computer vision systems. Canny has found that the requirements for the application of edge detection on diverse vision systems are relatively similar. Thus, an edge detection solution to address these requirements can be implemented in a wide range of situations. In this module, is used to classify the abnormal behavior in ATM. To implement the SVM classification for detect the abnormal behaviors. it take the input from the previous step edge detection output. The edges are converted to the feature vectors, and its matching to the training dataset. The SVM algorithm Perform the classification in parallel manner. In machine learning, support vector machines are supervised learning models with associated learning algorithms that analyze data used for classification and regression analysis. Given

a set of training examples, each marked as belonging to one or the other of two categories, an SVM training algorithm builds a model that assigns new examples to one category or the other, making it a non-probabilistic binary linear classifier. In the this Module, is used to check the user actions and it detect the irrelevant actions are performed in the inside of the ATM. And it compares the user actions and stored action templates if it is match to send the alert message immediately to the admin and nearest Police station. In this module, we can extract the matched objects in database. Then provide the matched objects with frames. Then evaluate the performance of the system using false positive rate metrics. Proposed approach provides reduce number of false positive rates. The SVM is used to reduce the time complexity of the classification.

CONCLUSIONS

In this video surveillance system, the proposed solution contributes to make full use of detected and alarmed events by smart monitoring cameras. An effectively improve the performance of Surveillance System in ATM.

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